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NOTICE OF ALLOWANCE AND FEE(S) DUE

23373 7590 10/16/2009

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

HU, HENRY S

ART UNIT

PAPER NUMBER

1796

DATE MAILED: 10/16/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/550,389

09/22/2005

Tatsuya Morikawa

Q89929

1258

TITLE OF INVENTION: FLUORINE-CONTAINING GRAFT OR BLOCK POLYMER

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	01/19/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

23373 7590 10/16/2009

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/550,389 09/22/2005 Tatsuya Morikawa Q89929 1258

TITLE OF INVENTION: FLUORINE-CONTAINING GRAFT OR BLOCK POLYMER

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$300 \$0 \$1810 01/19/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
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HU, HENRY S 1796 526-255000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,389	09/22/2005	Tatsuya Morikawa	Q89929	1258
23373	7590	10/16/2009	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			HU, HENRY S	
			ART UNIT	PAPER NUMBER
			1796	
DATE MAILED: 10/16/2009				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 558 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 558 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/550,389	MORIKAWA ET AL.	
	Examiner	Art Unit	
	HENRY S. HU	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment of June 16, 2009.
2. ☒ The allowed claim(s) is/are 1-3 and 9.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
|--|---|

1. This application is in condition for allowance except for the presence of **Claims 6-8 (Group III), which is non-elected without traverse** as filed on December 3, 2008.

Accordingly, Claims 6-8 has been cancelled. An action follows.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The examiner has cancelled the above-mentioned Claims 6-8, which are **non-elected without traverse** by Attorney **Abraham J. Rosner** (registration # 33,276, tel: 202 293-7060) on December 3, 2008.

Claim

Claims 6-8 please cancel Claims 6-8

DETAILED ACTION

3. This Office Action is in response to **Amendment** filed on June 16, 2009, which is in response to non-final office action filed on February 18, 2009. With such an amendment

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along with above Examiner's Amendment, **Claim 1 is amended; Claims 4-5 are previously cancelled, non-elected Claims 6-8 are currently cancelled, while no new claim is added.**

To be specific, parent **Claim 1** is now "once-amended" in three ways including: (A) to clarify the graft or the block polymer is obtained by reacting a fluorine containing compound (having a fluorine containing elastomer segment) with a silicone rubber (having at least one amino group), (B) said fluorine containing compound (having a fluorine containing elastomer segment) is obtained by **polymerizing a fluorine containing monomer with a fluorine containing compound represented by the formula (1) as $X^1-R_f^1-C(=O)-OR^1$** , and (C) to clarify the factor of R_f^1 to be a bivalent fluorine containing alkylene group. Accordingly, claim objection on Claim 1 is withdrawn.

This application **10/550,389** is a **371/PCT/JP04/08114** with a Japanese priority at **June 11, 2003**. Two IDS' (1 page each) are filed so far. **Claims 1-3 and 9 with only one independent claim (Claim 1) are now pending.** An action follows.

4. Claim rejections under **Non-Final** Office Action filed on February 18, 2009 are now removed for the reasons given in paragraphs 5-13 thereafter.

Allowable Subject Matter

4. Claims 1-3 and 9 are allowed.

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5. The following is an examiner's statement of reasons for allowance: The above Claims 1-3 and 9 are allowed over the closest references:

6. The limitation of “once-amended” parent **Claim 1** of the present invention relates to a graft or a block polymer comprising at least one kind of a silicone rubber segment and at least one kind of fluorine containing elastomer segment,

the graft or the block polymer being obtained by reacting a fluorine containing compound (having a fluorine containing elastomer segment) with a silicone rubber (having at least one amino group),

wherein said fluorine containing compound (having a fluorine containing elastomer segment) is obtained by polymerizing a fluorine containing monomer with a fluorine containing compound represented by the formula (1) as $X^I-R_f^I-C(=O)-OR^I$.

wherein X^I is an iodine atom or a bromine atom, R_f^I is a bivalent fluorine containing alkylene group having 1 to 30 carbon atoms and possibly containing an oxygen atom, and R^I is an alkyl group having 1 to 3 carbon atoms.

See other limitations of dependent **Claims 2-3 and 9**.

7. Applicant has now on this amendment claimed in “once-amended” **Claim 1** an unexpected way of obtaining a graft or a block polymer comprising at least one kind of a silicone rubber segment and at least one kind of fluorine containing elastomer segment. It is achieved by reacting a fluorine containing compound (having a fluorine containing

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elastomer segment) with a silicone rubber (having at least one amino group). With current amendment, said fluorine containing compound (having a fluorine containing elastomer segment) is obtained by polymerizing a fluorine containing monomer with a fluorine containing compound represented by the formula (1) as $X^1-R_f^1-C(=O)-OR^1$. As a result, the obtained graft or block polymer of the present invention has **amide bond -CONH-** which is formed by reacting $-COOR^1$ derived from the fluorine-containing elastomer segment and the amino group of the silicone rubber segment (see page 7 in the middle of Remarks).

8. Previous 102(b) rejections by four references including **Heeks, Konno, Kojima and Eguchi** in combination or alone cannot stand with current amendment as follows:

As discussed earlier, each of four references including **Heeks, Konno, Kojima and Eguchi** may disclose the preparation of some “grafted” or “crosslinked” fluoropolymers, wherein each case comprises the claimed two components including: (A) a fluorinated polymer segment to be coupled with (B) an amine-endcapped silicone rubber segment. However, **Heeks** has no description as to any cure site monomer having an ester moiety. Therefore, the polymer of Heeks does not have an amide bond, and is structurally different from the presently claimed graft or block polymer (see page 7 bottom to page 8 top).

9. **Konno** may disclose graft copolymerizing a specific organosilicon compound onto a polyamine-vulcanizable fluororubber. Konno does not disclose the reactive site of the polyamine-vulcanizable fluororubber. That is, Konno does not disclose the presently claimed

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elastomer segment obtained by polymerizing a fluorine containing monomer with the fluorine containing compound having the formula (1) which has an ester moiety (see page 8 middle).

10. With respect to **Kojima and Eguchi**, the reactive site defined in the elastomer of the present invention structurally differs from that of Kojima in which the reactive site is an epoxy group, an amino group, an organic acid group or a vinyl group (see page 8 bottom to page 9 top).

11. In summary, **the structure of the presently claimed graft or block polymer is quite different from that of the polymers of the cited references.** There is no teaching or suggestion in the cited references as to preparation of the presently claimed graft or block polymer having a -CONH- bond. Therefore, the references in combination or alone cannot disclose or suggest such a graft or block polymer as discussed above.

12. After further examination and search, the examiner found the following prior art did not teach the claimed limitation:

US 3,024,224 to Herbst et al. only discloses a process for producing some fluoropolymers in the presence of co-monomer $\text{CF}_2=\text{CHX}$ wherein X is F, Cl, Br and I so as to be useful as a polymerization modifier in controlling molecular weight. **The claimed halogen transfer mechanism may be involved** in the polymerization process (column 2, line 24-69).

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However, the claimed silicone rubber is not disclosed or suggested to be grated together with the fluoropolymer.

Three references including **US 7,226,965 B2 to Hattori et al.**, **US 7,211,625 B2 to Tsuji et al.**, and **US 5,159,004 to Furuta et al.** may disclose the preparation of some graft or block polymers. However, the obtained graft or block polymer has no **amide bond –CONH–** within. Additionally, the claimed silicone rubber is not disclosed or suggested to be grated together with the fluoropolymer.

13. As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the above references to render the present invention anticipated or obvious to one of the ordinary skill in the art. Therefore, the independent **Claim 1** is allowed for the reason listed above. Since the prior art of record fails to teach the present invention, the remaining pending dependent **Claims 2-3 and 9** are passed to issue.

14. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu whose telephone number is (571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Vasu Jagannathan, can be reached on (571) 272-1119. The **fax** number for the

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organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Peter D. Mulcahy/
Primary Examiner, Art Unit 1796

/Henry S. Hu/
Examiner, Art Unit 1796

October 13, 2009